

A Case of Renal Cell Carcinoma Diagnosed with Pulmonary Metastasectomy

Pulmonary Metastasectomy

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Abstract

Nearly 3% of the tumors seen in adult age constitute renal cell carcinomas (RCCs). A total of 20-30 % of the patients with renal carcinoma are directly diagnosed during the course of metastatic disease. In order of decreasing frequency, they are mostly seen as metastases into lungs, lymph nodes, liver and bones. These patients frequently apply with complaints of pain due to compression of the mass lesion. We are presenting a 60-year-old patient who consulted to the outpatient clinics of chest diseases with pleuritic pain diagnosed as renal cell carcinoma after examination of the resected from pleural mass.

Keywords

Renal Cell Carcinoma; Lung; Metastatic Disease

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Introduction

Renal cell carcinoma is the most frequently seen malignant tumor of kidney and make up of 90-95% of all kidney tumors in adults. Nearly 3% of the tumors seen in adults are renal cell carcinomas (RCCs) [1]. Renal cell carcinoma is the most fatal urological cancer. It has been estimated that 63.920 new cases of RCC and 13.860 deaths attributable to the disease will be reported in the United States in 2014 [1]. At the time of diagnosis, distant organ metastases are encountered in 30% of the patients. In patients with renal cell carcinoma, RCC metastasizes into lungs (50-60%), bones (30-40%), liver (30-40%) and brain (5%) [2]. In patients with distant spread median survival time is nearly 10 months and long-term survival rate is less than 5 percent [3]. In this study, a case with renal cell carcinoma diagnosed when pulmonary metastasis is detected and relevant literature was reviewed.

Case Report

A 60-year-old female patient consulted to the outpatient clinic of chest diseases with a complaint of left flank pain. Chest radiograms of the patient who had previously suffered from pulmonary tuberculosis revealed diffuse nodular lesions (Figure 1a). Blood biochemistry parameters were within normal limits. Thoracic computed tomography examination disclosed bilateral multiple hypodense soft tissue lesions with a central necrotic area on lungs and hilar region, the largest ones measuring 5.3x3.6cm on the right and 5.2x3cm on the left side. (Figure 1b). Previously planned lung biopsy because of pulmonary tuberculosis. Transthoracic fine needle aspiration biopsy was performed. Pathology was assessed as a result of inflammation. After the lesion in the right lung was excised with wedge resection performed for diagnostic, palliative purposes. Histopathological diagnosis was reported as renal cell carcinoma (Figure 2a). Abdominal tomography of the patient revealed a heterogenous mass lesion with cystic-necrotic components originating from the right kidney and patchy areas of effacement (invasion) of fat planes between the right kidney and the liver (Figure 2b). After

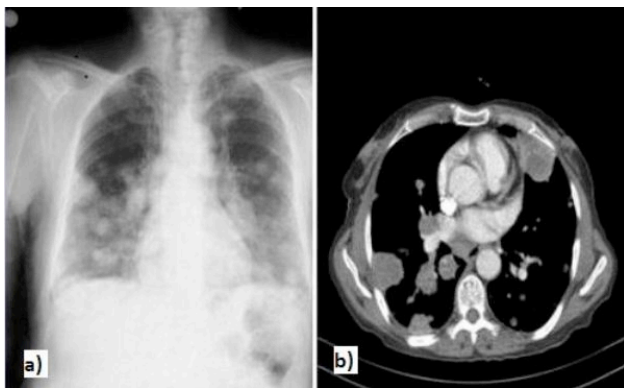


Figure 1. Diffuse nodular lesions on chest radiograms (a), On thoracic computed tomograms bilateral and multiple hypodense soft tissue lesions with central necrosis were seen on lungs and hilar regions the largest ones measuring 5.3x3.6cm on the right and 5.2x3cm on the left side (b).

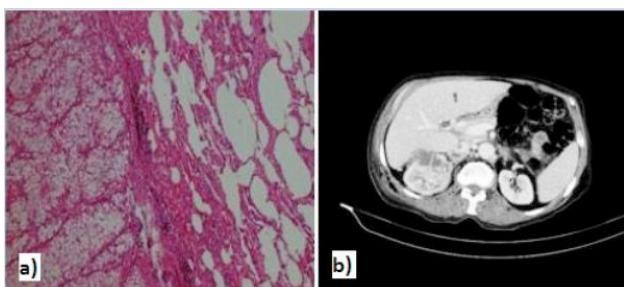


Figure 2. Metastatic lesions of clear-cell renal carcinoma in the lungs: on the left side nodular structures formed by large cells with clear cytoplasm are seen (a), A heterogenous mass with cystic-necrotic components originating from the right kidney (b).

examinations reinforcing the diagnosis, the patient was included in the chemotherapy program in the department of medical oncology.

Discussion

Metastatic renal tumors had a poor prognosis with a median survival time of 6-12 months, 2-year survival rates ranging between 10 and 20 percent [2]. The patients generally present with complaints of abdominal pain and they can consult with complaints related to the organs with metastatic lesions. Renal cell carcinoma is the most frequently seen urological malignancy in adults. Most commonly, it is observed during 5. and 6. decades of one's lifetime and more frequently seen in men at a rate of 1.5:1. Classical triad of RCC which consists of hematuria, flank pain and palpable mass is seen only in 5-10% of the patients [1]. Essentially these findings indicate diffuse disease and poor prognosis. Renal cell tumors can spread directly into vena cava inferior or through venous channels into renal vein. Therefore, they easily metastasize into other organs and lungs. In 20-30% of the patients with renal tumors, the diagnosis is established when metastatic disease is detected. In 20-40% of the nephrectomized patients with the indication of localized disease, metastatic disease has been detected during follow-up period [4]. McLoad et al. followed up 1071 patients with extrathoracic malignancies for a period of two years [5]. In conclusion, on chest radiograms of 163 patients abnormalities were detected and 25 of them were metastatic lesions in hilar and mediastinal lymph nodes were found. In conclusion, investigators reported that among extrathoracic tumors most frequently testicular tumors (29.4%) and renal cell tumors (21.4%) were seen [5]. Kutty and Varkey evaluated 46 cases with renal cell carcinoma and compared their outcomes with their clinical and histopathological findings [6]. During diagnostic process, intrathoracic metastases were detected in 54% of the patients. Any renal symptom was not found in our patient. The patient had previously suffered from pulmonary tuberculosis and presented with pleuritic chest pain which led us to search for pulmonary diseases. Though our approach to the patient was made with palliative and diagnostic purposes, interestingly, diagnosis was established based on the examination of the metastatic lesion. Without any need for more invasive renal procedures, quality of life of the patient improved and her survival time prolonged. Mean survival time of these patients is 10-12 months, while 2-year survival rate is 18-20 percent [7]. Our patient was pre-emptively included in cytokine immunotherapy by the department of medical oncology. The patient is leading her routine daily life at his 18. month of her treatment without development of any symptom. Applicability of metastasectomy depends on many factors including location, number of and excisability of the tumor, surgical experience of the surgeon, patient's compliance and general health state [6,7]. In our patient, even though metastasectomy was performed with the purpose of diagnosis, not with the intention to treat, establishment of the diagnosis in this patient using a less invasive procedure conferred benefit to the patient with diffuse metastases. Before systemic treatment, despite very important data suggesting survival advantage provided by nephrectomy, a consensus has not been reached about effectiveness, indications and timing of the surgical treatment in metastatic renal tumors. In a literature review performed on 474 patients, the rate of spontaneous regression in metastatic disease by application of nephrectomy per se has been reported as 0.8 percent [8]. In other words, nephrectomy alone is not curative in metastatic disease.

In conclusion, cases with renal cell carcinomas can present with very different clinical manifestations and demonstrate diverse clinical courses. Even if they had metastases, we can say that early diagnosis and treatment can increase survival time and quality of life of the patient.

Scientific Responsibility Statement

The authors declare that they are responsible for the article's scientific content including study design, data collection, analysis and interpretation, writing, some of the main line, or all of the preparation and scientific review of the contents and approval of the final version of the article.

Animal and human rights statement

All procedures performed in this study were in accordance with the ethical standards of the institutional and/or national research committee and with the 1964 Helsinki declaration and its later amendments or comparable ethical standards. No animal or human studies were carried out by the authors for this article.

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Conflict of interest

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